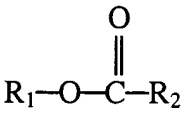
WHAT IS CLAIMED IS:

1. A nematicidal composition comprising:

(a) an effective amount of a compound having the formula



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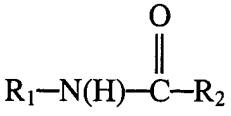

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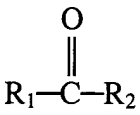


wherein:

R_1 = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

R_2 = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one substituant at one or both of the 12th and 13th carbons, wherein the substituants are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

(b) an aqueous surfactant.

2. The nematicidal composition of claim 1 wherein R_1 is H or in the case of a fatty acid salt, a cation.

3. The nematicidal composition of claim 1 wherein R_1 is a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

4. The nematicidal composition of claim 1 wherein R_1 is a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and an unsubstituted C1-C2 carbon chain.

5. The nematicidal composition of claim 1 wherein the C1-C2 carbon chain of one or both of R_1 and R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, and epoxy.

6. The nematicidal composition of claim 1 wherein the C1-C2 carbon chain of one or both of R_1 and R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, halogen, and amino.

7. The nematicidal composition of claim 1 wherein R_1 is a substituted C1 methyl.

8. The composition of claim 1 wherein R_1 is a C1-C2 substituted or unsubstituted carbon chain.

9. The nematicidal composition of claim 1 wherein R_2 is a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9^{th} and 10^{th} carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12^{th} and 13^{th} carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12^{th} and 13^{th} carbons and at least one substituant at one or both of the 12^{th} and 13^{th} carbons, wherein the substituants are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and an unsubstituted C1-C2 carbon chain.

10. The nematicidal composition of claim 1 wherein the C1-C2 carbon chain of R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, oxo, halogen, amino, cyano, azido, and epoxy.

11. The nematicidal composition of claim 1 wherein the C1-C2 carbon chain of R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, oxo, halogen, azido, and amino.

12. The nematicidal composition of claim 1 wherein the C1-C2 carbon chain of R_2 is singly substituted.

13. The nematicidal composition of claim 1 wherein R_1 is H.

14. The nematicidal composition of claim 1 wherein R_1 is a cation.

15. The nematicidal composition of claim 1 wherein R_2 is substituted only at one or both of 12^{th} and 13^{th} carbons counting from the carbonyl (C=O) carbon.

16. The nematicidal composition of claim 15 wherein R_2 is substituted only at the 12^{th} carbon counting from the carbonyl (C=O) carbon.

17. The nematicidal composition of claim 15 wherein R_2 is substituted only at the 13^{th} carbon counting from the carbonyl (C=O) carbon.

18. The nematicidal composition of claim 15 wherein within R_2 the substituants are polar and are selected from the group consisting of: hydroxy, oxo, epoxy, halogen, amino, cyano and azido.

19. The nematicidal composition of claim 15 wherein within R_2 the substituants are hydrogen bond acceptors and are selected from the group consisting of: hydroxy, oxo, epoxy, amino, cyano and azido.

20. The nematicidal composition of claim 15 wherein within R_2 the substituants are selected from the group consisting of: hydroxy, oxo and epoxy.

21. A nematicidal composition comprising:

(a) a fatty acid or salt or ester or amide or aldehyde or ketone selected from the group consisting of: ricinoleic acid, ricinelaidic acid, 12-oxo-9(Z)-octadecenoic acid, 12-oxo-9(E)-octadecenoic acid, (12,13)-epoxy-trans-9-octadecenoic acid and vernolic acid; and

(b) an aqueous surfactant.

22. The nematicidal composition of claim 1 or claim 21 wherein the aqueous surfactant is selected from the group consisting of: ethyl lactate, Span 20, Span 40, Span 80, Span 85, Tween 20, Tween 40, Tween 80, Tween 85, Triton X 100, Makon 10, Igepal CO 630, Brij 35, Brij 97, Tergitol TMN 6, Dowfax 3B2, Physan and Toximul TA 15.

23. The nematicidal composition of claim 1 or claim 21 wherein the composition further comprises: (c) a permeation enhancer.

24. The nematicidal composition of claim 23 wherein the permeation enhancer is a cyclodextrin.

25. The nematicidal composition of claim 1 or claim 21 where the composition further comprises:

(c) a co-solvent.

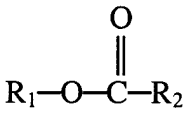
26. The nematicidal composition of claim 25 wherein the co-solvent is selected from the group consisting of: isopropanol, acetone, 1,2-propanediol, a petroleum based-oil and a mineral oil.

27. The nematicidal composition of claim 1 or claim 21 further comprising a nematicide selected from the group consisting of: avermectins, milbemycin, aldicarb, oxamyl, fenamiphos, fosthiazate and metam sodium.

28. The nematicidal composition of claim 1 or claim 21 further comprising an inhibitor of oxidation.

29. The nematicidal composition of claim 28 wherein the inhibitor of oxidation is selected from the group consisting of: butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT).

30. The nematicidal composition of claim 1 wherein the composition comprises at least two different compounds having the formula



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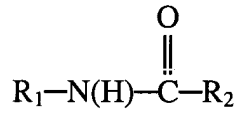

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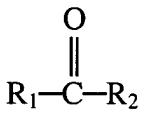


wherein:

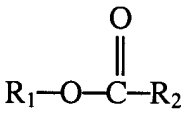
R_1 = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

R_2 = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one substituant at one or both of the 12th and 13th carbons, wherein the substituants are selected

from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

31. A method for control of unwanted nematodes, the method comprising administering to a vertebrate, a plant, a seed or soil a composition comprising:

(a) a compound having the formula



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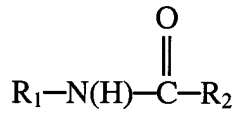

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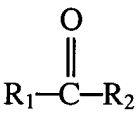


wherein:

R_1 = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

R_2 = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one substituant at one or both of the 12th and 13th carbons, wherein the substituants are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

(b) an aqueous surfactant.

32. The method of claim 31 wherein R_1 is H or a cation.

33 The method of claim 31 wherein R_1 is a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy,

halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

34. The method of claim 31 wherein R_1 is a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and an unsubstituted C1-C2 carbon chain.

35. The method of claim 31 wherein the C1-C2 carbon chain of one or both of R_1 and R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, and epoxy.

36. The method of claim 31 wherein the C1-C2 carbon chain of one or both of R_1 and R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, halogen, and amino.

37. The method of claim 31 wherein R_1 is a substituted C1 methyl.

38. The method of claim 31 wherein R_1 is a C1-C2 substituted or unsubstituted carbon chain.

39. The method of claim 31 wherein R_2 is a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9^{th} and 10^{th} carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12^{th} and 13^{th} carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12^{th} and 13^{th} carbons and at least one substituant at one or both of the 12^{th} and 13^{th} carbons, wherein the substituants are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and an unsubstituted C1-C2 carbon chain.

40. The method of claim 31 wherein the C1-C2 carbon chain of R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, oxo, halogen, amino, cyano, azido, and epoxy.

41. The method of claim 31 wherein the C1-C2 carbon chain of R_2 is substituted and the substituants are selected from the group consisting of: hydroxy, oxo, halogen, azido, and amino.

42. The method of claim 31 wherein the C1-C2 carbon chain of R_2 is singly substituted.

43 The method of claim 31 wherein R_1 is H.

44. The method of claim 31 wherein R_1 is a cation.

45. The method of claim 31 wherein R_2 is substituted only at one or both of 12^{th} and 13^{th} carbons counting from the carbonyl (C=O) carbon.

46. The method of claim 45 wherein R_2 is substituted only at the 12^{th} carbon counting from the carbonyl (C=O) carbon.

47. The method of claim 45 wherein R_2 is substituted only at the 13^{th} carbon counting from the carbonyl (C=O) carbon.

48. The method of claim 45 wherein within R_2 the substituants are polar and are selected from the group consisting of: hydroxy, oxo, epoxy, halogen, amino, cyano and azido.

49. The method of claim 45 wherein within R_2 the substituants are hydrogen bond acceptors and are selected from the group consisting of: hydroxy, oxo, epoxy, amino, cyano and azido.

50. The method of claim 45 wherein within R_2 the substituants are selected from the group consisting of: hydroxy, oxo and epoxy.

51. A method for control of unwanted nematodes, the method comprising administering to a vertebrate, plant, seed or soil a composition comprising:

(a) a fatty acid or salt or ester or amide or aldehyde or ketone selected from the group consisting of: ricinoleic acid, ricinelaidic acid, 12-oxo-9(Z)-octadecenoic acid, 12-oxo-9(E)-octadecenoic acid, (12,13)-epoxy-trans-9-octadecenoic acid and vernolic acid; and

(b) an aqueous surfactant.

52. The method of claim 31 or claim 51 wherein the aqueous surfactant is selected from the group consisting of: ethyl lactate, Span 20, Span 40, Span 80, Span 85, Tween 20, Tween 40, Tween 80, Tween 85, Triton X 100, Makon 10, Igepal CO 630, Brij 35, Brij 97, Tergitol TMN 6, Dowfax 3B2, Physan and Toximul TA 15.

53. The method of claim 31 or claim 51 wherein the composition further comprises:

(c) a permeation enhancer.

54. The method of claim 53 wherein the permeation enhancer is a cyclodextrin.

55. The method of claim 31 or claim 51 wherein the composition further comprises:

(c) a co-solvent.

56. The method of claim 55 wherein the co-solvent is selected from the group consisting of: isopropanol, acetone, 1,2-propanediol, a petroleum based-oil and a mineral oil.

57. The method of claim 31 or claim 51 further comprising a nematicide selected from the group consisting of: avermectins, milbemycin, aldicarb, oxamyl, fenamiphos, fosthiazate and metam sodium.

58. The method of claim 31 or claim 51 further comprising an inhibitor of oxidation.

59. The method of claim 31 or claim 51 wherein the inhibitor of oxidation is selected from the group consisting of: butylated hydroxyanisole (BHA) and butylated hydroxytoluene (BHT).

60. The method of claim 31 or claim 51 wherein the nematode infects plants and the composition is applied to the soil or to plants.

61. The method of claim 60 wherein the composition is applied to soil before planting.

62. The method of claim 60 wherein the composition is applied to soil after planting.

63. The method of claim 60 wherein the composition is applied to soil using a drip system.

64. The method of claim 60 wherein the composition is applied to soil using a drench system.

65. The method of claim 60 wherein the composition is applied to plant roots.

66. The method of claim 60 wherein the composition is applied to seeds.

67. The method of claim 31 or claim 51 wherein the nematode infects a vertebrate.

68. The method of claim 67 wherein the vertebrate is a mammal.

69. The method of claim 67 wherein the vertebrate is a bird.

70. The method of claim 67 wherein the composition is administered to non-human mammal.

71. The method of claim 67 wherein the composition is administered to a human.

72. The method of claim 67 wherein the composition is formulated as a drench to be administered to a non-human vertebrate.

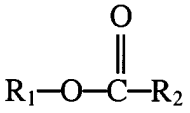
73. The method of claim 67 wherein the composition is formulated as an orally administered drug.

74. The method of claim 67 wherein the composition is formulated as an injectable drug.

75. A feed for a non-human vertebrate comprising:

(a) a feed suitable for a non-human vertebrate;

(b) a compound having the formula



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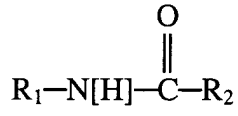

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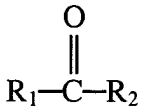


wherein:

R_1 = H, a cation (e.g., a fatty acid salt) or a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

R_2 = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one substituant at one or both of the 12th and 13th carbons, wherein the substituants are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

(b) an aqueous surfactant.

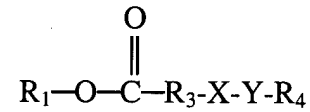
76. The feed of claim 75 wherein the feed has been treated to reduce linoleic acid content, linolenic acid content or both.

77. The feed of claim 76 wherein both the gamma linolenic acid content and the alpha linolenic acid content have been reduced.

78. The feed of claim 75 wherein the feed is selected from the group consisting of: soy, wheat, corn, sorghum, millet, alfalfa, clover, and rye.

79. A nematicidal composition comprising:

(a) an effective amount of a compound having the formula



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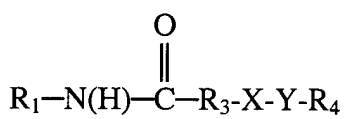

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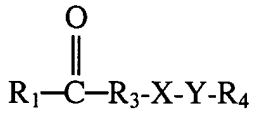


wherein:

R_1 = H, a cation (e.g., a fatty acid salt) or a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain;

R_3 = a C11 substituted or unsubstituted carbon chain having a *cis* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain;

R_4 = a C2-C6 substituted or unsubstituted carbon chain wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain;

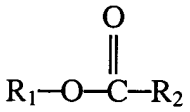
X and Y are independently a substituted or unsubstituted methyl or S, provided at least one or X and Y is S and wherein the substituants on the methyl selected from the group consisting of: halogen, hydrogen, amino, and hydroxy; and

(b) an aqueous surfactant.

80. The nematicidal composition of claim 79 wherein one of X and Y is CH_2.

81. A nematicidal composition comprising;

(a) an effective amount of a compound having the formula



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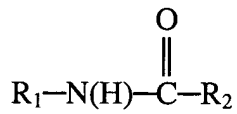

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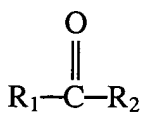

wherein:

R_1 = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the substituants are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

R_2 = a C15-C19 substituted or unsubstituted carbon chain having a single bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon and at least one substituant at one or both of the 12th and 13th carbons, wherein the substituants are selected from the group consisting of hydroxy, halogen, amino, cyano, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

(b) an aqueous surfactant.

82. The nematicidal composition of claim 81 wherein R_2 = a C15-C19 substituted or unsubstituted carbon chain having a single bond between the 9th and 10th carbons and a single bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon and at least one substituant at one or both of the 12th and 13th carbons counting from the carbonyl (C=O) carbon, wherein the substituants are selected from the group consisting of hydroxy, halogen, amino, cyano, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

83. The nematicidal composition of claim 81 wherein the 12th and 13th carbons are substituted with an epoxy group.

84. The nematicidal composition of claim 81 wherein the 12th carbon is substituted with a hydroxy group.